



Report on the I<sup>st</sup> International Conference

## Forum of Low-Emission Economy

Conference Hall, Central Agricultural Library, ul. Krakowskie Przedmieście 66, Warsaw  
19 April 2013, Warsaw

### ORGANISERS:

PROCESY   
INWESTYCYJNE

### PATRONAGE AND TECHNICAL CONTENT SUPERVISION:



### HONORARY PATRONAGE:





FORUM GOSPODARKI  
NISKOEMISYJNEJ

# I FORUM GOSPODARKI NISKOEMISYJNEJ



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*The debate is co-financed by the National Fund for Environmental Protection and Water Management*



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## INTRODUCTION

For four years we have been organising the Energy Efficiency Forum. This year we decided to transform its formula into Forum of Low-Emission Economy. The reason for the change arises from the strategic importance of the National Programme for Development of Low-Emission Economy and the participation therein of the Public Board for Development of Low-Emission Economy, with which Procesy Inwestycyjne has been cooperating in the promotion and education related to low-emission economy. The National Programme is one of eight strategic programmes of the Polish government, and is fundamental to all sectors of our economy and natural environment.

The Forum presented to the large audience:

- Overall and specific objectives of the Programme and the reasons to achieve them
- 11 specialist sectors in which the Programme is implemented
- Synthetic information on several hundred of detailed fields of activity within the Programme
- Principles of evaluation and prioritisation of the above-mentioned activities
- Directions of further work within the Programme

A key objective of the Forum is to make the national and international (European) audience aware that Poland is elaborating its own model of development of low-emission economy. The presentation of the Polish perspective will help justify Poland's critical approach to the proposals put forward by the richest EU member states. It will also help Poland formulate its own approach which is much closer to the principles of sustainable development. We intend to convince the public opinion in the country that the core part of the term National Programme for Development of Low-Emission Economy is the **development of the economy**, and the other words merely specify the attributes related to the programme's national character, programming nature and focus on emission reduction. In other words, the programme's name rephrases Article 5 of the Polish Constitution, which refers to sustainable development.

The First Forum of Low-Emission Economy consisted of two thematic sessions devoted to Smart Grids, organised within the series of debates and conferences entitled "Smart customer in a smart grid", implemented with the support of the National Fund for Environmental Protection and Water



Management. In the two conference sessions the invited experts explained how the idea of Smart Grids supports the development of low-emission economy in Poland, and presented what support mechanisms are available to make Smart Grids technologies more popular. The theme of the third session of the Forum was **“Innovative dimension of low-emission economy – RES AND SMART SOLUTIONS AS SUPPORT TO LOW-EMISSION ECONOMY AND ENERGY MARKET (new technologies and new regulations).”** The theme of session four was **“Support mechanisms for low-emission economy - past experience and the new financial perspective”**. The keynote presentation will be given by **Małgorzata Skucha**, President of the Board of the National Fund for Environmental Protection and Water Management.

**The participants of the FORUM included:**

- **Janusz Piechociński, Deputy Prime Minister and Minister of Economy**
- **Grażyna Henclewska, Deputy Minister of Economy**
- **Prof. Jerzy Buzek, Chairman of the Public Board of the National Programme for Development of Low-Emission Economy**
- **Lena Ek, Minister of the Environment, Sweden**
- **Dr Silke Karcher, Head of Division, European Climate and Energy Policy, German Federal Ministry for the Environment Nature Conservation and Nuclear Safety**
- **Artur Runge-Metzger, Directorate A, International and Climate Strategy, Directorate General for Climate Action**
- **Radosław Dudziński, Vice-President of the Board, PGNiG**
- **Herbert Wirth, President of the Board, KGHM Polska Miedź**
- **Joanna Schmid, Vice-President of the Board for Strategy and Development, Tauron Polska Energia**
- **Marian Strumiłło, Vice-President of the Board, Dalkia Polska**
- **Philippe Castanet, President of the Board, EDF Polska**



- **Grzegorz Szymczak, President of the Board, EDP Renewables**
- **Roman Łój, President of the Board, Katowicki Holding Węglowy**
- **Mikael Lemström, President of the Board, Fortum Power & Heat Polska**
- **Małgorzata Skucha, President of the Board, National Fund for Environmental Protection and Water Management**
- **Prof. Krzysztof Źmijewski, Secretary General, Public Board of the National Programme for Development of Low-Emission Economy**
- **Krzysztof Telega, Vice-President of the Board, BOŚ Bank**
- **Prof. Andrzej Kraszewski, Environmental Engineering Department, Warsaw University of Technology (former Minister of Environment)**
- **PhD Eng. Piotr Pryciński, Deputy Head of Projects Management Department, National Centre for Research and Development**

## Official opening of the FORUM

**Janusz Piechociński**, Deputy Prime Minister and Minister of Economy

The 1<sup>st</sup> Forum of Low-Emission Economy was officially opened by Deputy Prime Minister and Minister of Economy Janusz Piechociński. In his presentation he clearly emphasized a different approach of Poland to the implementation of EU policies in the field of low-emission economy. The Ministry of Economy, which is preparing the National Programme for Development of Low-Emission Economy, emphasizes that the key element of this programme is its transparency, and the fact that it is formed with the participation of citizens. Mr Prime Minister noted that the transition towards low-emission economy is not only a privilege of highly developed countries. The rapid development of the so-called green industry throughout the EU suggests that the sector, after meeting certain additional conditions, may become an engine of economic growth in Poland too. It may also contribute to the creation of new, stable jobs. According to Janusz Piechociński Poland from the very beginning should participate in the transformation towards low-emission economy, undertaken by many countries, because in the globalised world the winner takes it all.

*- If we are not innovative and we do not develop our own technologies, we will have to merely imitate*



*solutions adopted by other countries. At the last summit in St. Petersburg, famous not for discussing the state of conservation of the Baltic Sea, but for discussing gas supply contracts and investment plans of one of the largest suppliers of gas to the European market, the current German Minister for the Environment and Nuclear Safety mentioned that Germany, by 2020, will have reached 50% share of RES in the total energy mix of the country. By 2050 the share is going to be as high as 80 percent. We should also remember that the strongest European economy neighbouring our country, and closely related to us, has made a great effort in the area of low-emission economy, said Mr Prime Minister. He informed that in order to fully use the economic potential connected with the transformation towards low-emission economy, the Ministry of Economy, in cooperation with other ministries and with different experts, is preparing the National Programme of Development of Low-Emission Economy. The aim of the programme is to stimulate changes that result in the transformation of the Polish economy towards a low-emission economy, while maintaining the principles of sustainable development. - In other words, the programme is going to include only such solutions which lead to the reduction of emissions and at the same time promote economic growth and increased quality of life of the population. This does not mean that the Programme will cover only activities which do not require any costs. The modernisation of the economy and the increase of its innovativeness have to cost, but the recipe for success is the appropriate distribution of costs over time so that the profits from one project become the source of funding for the next project. Therefore, all the activities to be included in the Programme will support economic growth and, even if they require investment in the initial stage of implementation, in the long run will generate profits for the whole economy, said Janusz Piechociński.*

These are important words as they mean that the implementation of low-emission mechanisms in the Polish economy is primarily aimed to improve its competitiveness and to bring tangible benefits for the country. Deputy Prime Minister Piechociński stressed that in the implementation of the Programme it should be remembered that the numerous objectives set by the state and the public sector have to be achieved by different economic entities, with various scales of capital, and each of those entities has its own economic calculations. Mr Piechociński referred to the example of discussion that is being held outside the government, and will soon be held within the government, in relation to the decision of one of power sector giants not to invest in one of its power plants. According to Deputy Prime Minister, this example shows very clearly that there can be significant differences in the cost-benefit analyses of investment outlays, carried out from the perspective of the enterprise and those carried out from the





point of the tasks arising from the policy of the state. Therefore, stressed Mr Prime Minister, the National Programme of Development of Low-Emission Economy adopted the approach in which the goal of achieving the emission reduction effect will not be imposed in advance but will be determined after the identification of all areas in which it is possible to reduce greenhouse gas emissions. - *Therefore, the approach proposed within the National Programme of Development of Low-Emission Economy ensures that emission reductions will not be achieved at the expense of the competitiveness of the economy. This is, which I strongly emphasised at a meeting with the EU Commissioner for the Environment, the main difference between the Polish approach and the position of the European Commission which, in designing the low-emission strategy for the EU until 2050, in advance adopted the target of emission reduction by 80 percent. This method of operation, although simpler to implement, in our opinion does not guarantee that the transformation towards low-emission economy is carried out without a negative effect on economic growth, which is particularly important in the absence of a global agreement. Currently on the European continent the overproduction potential in the steel industry is 75 million tons of steel per year. If we do not introduce new technologies, within the next 10 years it may turn out that it is no longer profitable to produce steel in Europe, and the only type of work that can be done is to process "bits and pieces" imported from Asia or South America. This example shows very clearly that our activities are governed by common sense and constitute a kind of consensus between what is called re-industrialisation of Europe and the need to achieve the climate-related targets. We should remember that in the current situation any additional burden imposed on European companies can result in deterioration of their international competitiveness. Thus, in our opinion, at least until the conclusion of a global climate agreement, we in the EU and Poland should focus on national measures adjusted to the possibilities of individual economies. The time for more extensive climate ambitions of the EU may come sometime in the future. For now, however, we have to check whether other countries, outside the EU, are able to follow the same path,* said Janusz Piechociński.

To illustrate his words, Deputy Prime Minister Piechociński referred to the ambition of enlarging the potential of coal-based energy generation in Asia. He informed that last year Poland extracted 79 million tons of coal, and China extracted 3.5 billion tons. In the next 10 years India is planning to increase its coal extraction by 10 times. Also by 10 times it plans to increase the share of coal-based electricity production in its overall energy mix. Turkey starts to exploit large deposits of lignite. Even the small country of Montenegro has returned to coal-based power generation. Vietnam, with the support of Polish know-how, will continue to develop its coal-based energy sector. – *If in the area of emissions from coal-based power*



*industry only, the EU manages to achieve agreement, our extraction capacity will account for half of the annual capacity of the whole EU. The comparison of the potentials of the EU and China shows that we should once again, in civic debates and the upcoming elections to the European Parliament (May 2014), define the degree of social acceptance for the current efforts related to climate change, said Mr Piechociński. The Deputy Prime Minister pointed out that on the one hand, we have very strong environmental movements, but on the other hand jobs are urgently needed. In his opinion, the EU, which adopts certain standards, also with regard to the responsibility for the future, should obtain social acceptance in the field of climate protection. Mr Piechociński stressed this will be very difficult to achieve. However, according to him, climate protection is not only a social component but will soon be valued as an important element of economic nature. - I expect that during this First Forum, opinions expressed by experts will support the Public Board of the National Programme for Development of Low-Emission Economy, which cooperates with the Ministry, so that we can develop a rational, wise and socially approved programme of transformation of the Polish economy towards a low-emission economy, concluded Deputy Prime Minister Piechociński.*

**After Deputy Prime Minister Janusz Piechociński, the next speaker was Jerzy Buzek, Chairman of the Public Board of the National Programme for Development of Low-Emission Economy.** The Board, as one of the main public initiatives, supports with its specialist opinions the works of the National Programme for Development of Low-Emission Economy.

Professor Buzek informed that the Board has identified about 300 areas in 11 sectors of the economy, in which, as a group of experts, it may present very detailed opinions. Mr Buzek stressed that the Board expects the government to seriously consider the opinions and conclusions of the Board experts and the Forum. - *We expect the implementation by the government of the priorities developed by us for the Polish economy as a set of bottom-up initiatives. This approach is very different from the one followed by the European institutions where certain solutions are imposed, said the Chairman of the Board. The main priorities of the Polish economy, according to Mr Buzek, are: the closure of the energy balance in the years 2015-2020, the indication of the best ways of spending the EU funds, and the development of a scenario for Polish investments, including their funding methods.*





Mr Buzek postulated to modernise the existing potential in the area of conventional power generation and build new capacities, develop energy generation based on cogeneration and renewable energy sources, invest in new cross-border connections and intensify measures in the fields of energy efficiency and development of prosumer energy, which are of high social value. – *We are going to obtain about 20-30 billion PLN of EU funds for measures related to low-emission economy. We have to spend this money wisely. It will be allocated not only to investments into low-emission energy sector but also to investments in transportation, construction, e-economy and other sectors of the economy. In pursuing those ambitious goals we need the support in the form of appropriate legal regulations. Therefore, it is necessary to undertake legislative measures to facilitate investments in low-emission economy*, he argued. According to Mr Buzek, good legislation should allow us to remove the current obstacles to such investments so that in 15 years from now we do not have such dilemmas as we have today, for instance how to close our energy balance.

After the opening presentations, the Forum's expert discussions began, which were divided into four sessions. The discussions in the individual sessions are summarised below.

## **Session I – National Programme of Development of Low-Emission Economy- state of development**

*Keynote speech:* **Grażyna Henclewska**, Deputy Minister of Economy

Ms Minister pointed out that the objective of the National Programme of Development of Low-Emission Economy aims to promote changes that will result in the transformation of Poland's economy towards a low-emission economy while maintaining the sustainable development of the country. – We want to achieve our objectives e.g. by saving materials, energy and resources, by maintaining appropriate energy efficiency and implementing new technologies, as well as developing new markets. We are going to use an algorithm which will confirm that the activities planned within the National Programme of Development of Low-Emission Economy are not going to cause an increase in global emissions by increasing the so-called carbon leakage (moving the industry to countries where climate-related legislation does not have to be complied with). The programme and its implementation will help us prepare the analyses based on which Poland will develop its position for the subsequent negotiations with the European Commission on the



reduction of emissions and the related costs, she said.

According to Ms Henclewska, a significant element of the programme is also the inclusion of changes in the education and teaching processes. This consists in the incorporation, in the education policy, of new challenges related to the implementation of low-emission economy, and consequently the preparation of the education system for new professions. Ms Minister informed that the Ministry of Economy has received a grant by the World Bank for continued works on the development of the programme. As part of those works, with the participation of external experts, the Ministry intends to develop a set of criteria necessary for the categorisation and prioritisation of areas having potential in the field of transformation towards low-emission economy, which areas have already been identified for the needs of the Programme. As a result of those works, the various sectors of the economy are going to determine their main priorities to be supported with the use of instruments directly or indirectly focused on the transformation towards low-emission economy. Ms Minister announced that the Ministry would like specific operational programmes in the future financial perspective to support the implementation of activities outlined in the National Programme of Development of Low-Emission Economy. According to Minister Henclewska, an important element of this programme is also the inclusion of changes in education and learning processes. This consists in the incorporation, in the education policy, of new challenges related to the implementation of low-emission economy, and consequently the preparation of the education system for new professions. Ms Minister informed that the Ministry of Economy has received a grant by the World Bank for continued works on the development of the programme. As part of those works, with the participation of external experts, the Ministry intends to develop a set of criteria necessary for the categorisation and prioritisation of areas having potential in the field of transformation towards low-emission economy, which areas have already been identified for the needs of the Programme. As a result of those works, the various sectors of the economy are going to determine their main priorities to be supported with the use of instruments directly or indirectly focused on the transformation towards the reduction of greenhouse gas emissions. Ms Minister announced that the Ministry is already preparing specific operational programmes for the implementation of the National Programme of Development of Low-Emission Economy.

Panel discussion with the participation of members of the Inter-ministerial Group for the Development of



Low-Emission Economy:

- **Jerzy Buzek**, Chairman of the Public Board of the National Programme for Development of Low-Emission Economy
- **Tomasz Michalski**, Director, Department of Transport Policy and International Cooperation, Ministry of Transport, Construction and Maritime Economy
- **Kazimierz Żmuda**, Deputy Director, Department of Agricultural Markets, Ministry of Agriculture
- **Otylia Trzaskalska-Stroińska**, Department of Innovation and Industry, Ministry of Economy
- **Prof. Krzysztof Zmijewski**, Secretary General, Public Board of the National Programme for Development of Low-Emission Economy

Subject: Objectives and advancement of the National Programme for Development of Low-Emission Economy, and examples of low-emission solutions

**During the expert discussion, Prof. Krzysztof Żmijewski**, Secretary General of the Public Board of the National Programme for Development of Low-Emission Economy, explicitly stressed that the global economy can not exist without coal. He emphasised that this is not a new position of the Board. – *Ever since its establishment, we have been saying that coal is needed but it must be used efficiently and rationally. We can not afford to burn coal with an efficiency of 30-35 per cent because this is unacceptable. We have technologies available to increase the efficiency, for instance we have CHP. That is why I publicly emphasize that the development of low-emission economy does not imply discrimination of coal*, said Professor Żmijewski.

This opinion was supported by **Jerzy Buzek**, who added that coal will be used in the energy sector at least until 2050.

**Kazimierz Żmuda** liked the concept of low-emission economy built in the bottom-up approach i.e. by end users - households (farms), then municipalities, and only then the government. In his opinion, using this approach we can be sure that we are not going to lose the needs of the citizens, which usually get lost in the macro-scale. He also stressed the large potential of agriculture in building low-emission economy. -



*Ultimately, in Poland we can produce more than 5 billion cubic meters per year (the technical potential is estimated at about 8 billion m<sup>3</sup>). For the sake of comparison, for production purposes farmers annually consume about 70 million cubic meters of natural gas, and all Polish villages consume 700 million cubic meters. I leave those numbers without comment, when we compare them with the biogas production potential in rural areas. Or there should be one comment: we should do everything to make use of this potential,* he said. - Particularly as it is associated with the protection of groundwater and surface waters, and a significant reduction of natural emissions of greenhouse gases, occurring in the process of agricultural production.

Ms **Otylia Trzaskalska-Stroińska** indicated that one of the specific objectives laid down in National Programme for Development of Low-Emission Economy is education, i.e. the development of new directions of education and new skills. The World Bank grant received by the Ministry consists of two components: the first one is the support of works on the National Programme for Development of Low-Emission Economy, in the form of teaching through practical activities such as increase of the public administration's potential in developing and implementing the policy shift towards a low-emission economy. The second component is the building of an internet platform for the exchange of knowledge between the public administration and key stakeholders in the field of low-emission economy.

According to Prof. **Krzysztof Źmijewski**, the National Programme for Development of Low-Emission Economy will indicate how and where, in specific areas of the economy, Poland can reduce its emissions and improve its competitiveness. Prof. Źmijewski used an example of the construction industry in Poland, which has already reduced its energy consumption by 40 percent as a result of reasonably implemented thermal retrofitting policy. Unfortunately, as Prof. Źmijewski reminded, in 2012 the Minister of Finance did not allocate any funds to the thermal retrofitting fund. - *In my opinion, measures in the field of education should also cover the Ministry of Finance and all those decision-makers who do not believe that energy saving is not profitable for the country's economy,* said Prof. Źmijewski.

According to **Tomasz Michalski**, Poland has three main sectors of the economy that generate the greatest greenhouse gas emissions: power industry, construction industry and transport sector. In Poland, the share of transport in the overall emissions is 12 percent. In more developed countries this proportion is twice as high. According to Mr Michalski, this is due to the fact that those economies are more strongly developed. - *In view of the above, for our GDP to grow to a level similar to those countries, the share of*



*domestic transport in the whole economy also needs to be larger, and therefore its emissions have to be greater too. We have to be aware that it is impossible to increase our GDP without the development of transport, he said. So what should Poland do to reduce its emissions from transportation? According to Mr Michalski, in the case of transport used in the industry, we can only optimize its use. However, in the case of passenger transport there are more solutions to use. Mr Michalski believes that we can limit the use of passenger cars to a minimum, and to commute to work by public transport. The public transport system can be further improved by using modern technologies so as to more efficiently use the existing road and rail infrastructure, and by improved planning of transport connections. Mr Michalski mentioned the example of Paris which is less congested than Warsaw. – People who live in Paris use passenger cars for travelling outside the city on weekends; on business says they use public transport, bicycles or scooters, he praised.*

## **Session II – Examples of low-emission solutions in Poland and other EU countries**

**A very important and informative presentation in the discussion on low-emission economy in Europe was given by Ms Lena Ek, Minister of Environment of Sweden. It is well-known that Sweden and the other Nordic countries are trend-setters in the area of environmental protection and sustainable use of natural resources.**

Minister Lena Ek stressed that low-emission economy is a necessity not only for the environment but also for the economy. Sweden has set out its objectives related to low-emission economy by determining its policies, objectives and required actions. Sweden has entered into a large number of partnerships with other countries, working e.g. on the Clean Development Mechanism, and working as part of a coalition for the clean environment in the European Union. Sweden has been conducting related measures already for 40 years, since 1972 when the United Nations conference in Stockholm was held. It focused on the growing importance of the need to protect the environment as part of economic development. By 2025 Sweden plans not to generate emissions into the air, in accordance with the objectives adopted by the Swedish Parliament.

Minister Lena Ek, in assessing the progress that has taken place in Sweden, drew attention to one particular achievement. Now, as a result of the implementation of low-emission economy, Sweden has doubled its economic growth. The country's greenhouse gas emissions have fallen by 50%, and the GDP





has doubled. – We introduced taxes on carbon dioxide emissions, and a number of different forms of incentives to encourage pro-environmental policy in Sweden, she said. However, Ms Minister pointed out that the growth in taxes does not create a positive climate for business. That's why Sweden had to create other mechanisms taking into account economic development and environmental protection; those mechanisms include:

- Urban development support project: the project was to reduce the negative impact on the environment; in the years 1990-2010, the overall spending under the project was 34 million euros
- Introduction of a system of certificates which confirm the use of energy from renewable sources
- Measures in the heating sector – measures relating to heat distribution i.e. the promotion of the use of biomass instead of oil; these measures create new jobs
- Reduced amount of landfilled waste; on the national scale, only 4% of waste is landfilled
- Increase in the number of vehicles that are environmentally friendly

As for the services sector, by 2020 Sweden plans to reduce its emissions by 40%. – We set ambitious targets so as to minimize any problems within one generation of citizens. For our part, we undertake a number of activities, and we assume there will be no emissions of greenhouse gases from industrial power generating sources by 2050. We take into account opportunities in all sectors and we will use these opportunities. I would like Sweden to use all the positive examples that can be found. We know that we are one of the leaders in building a green economy, and we are eager to share our experience with other countries. By 2050, we expect a number of changes related to the transformation. We believe that they will bring major benefit, said Minister Lena Ek.

The most interesting conclusion of the presentation by the representative of the Swedish Ministry of Environment is the statement that in the past the main factor forcing changes was to protect the natural environment. At present, this factor is the economy and consumer demand. Ms Minister also stressed that the society recognizes the economic benefits of such a policy. At the same time she emphasised that Sweden intends to improve its energy efficiency by 80%. In conclusion, Sweden has managed to reduce its emissions while achieving economic growth. - Our goal is to eliminate emissions from industrial-scale power generating sources by 2050, which will be of benefit not only for the environment but also to our economy. I do hope we can do it together with our friends and partners such as Poland, she said.





Germany is a major player in the EU's transition towards low emission economy. During the Forum, Dr **Silke Karcher**, Director of the European Energy and Climate Policy Department of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Germany), drew the participants' attention to significant similarities between changes in the Polish and German energy sectors. Silke Karcher emphasized that investments in renewable energy provide Germany with a great opportunity to do away with its dependence on the import of fuels. The main objective of the German climate protection policy is to reduce the emission of greenhouse gases by 80% by 2050 and to increase the use of renewable energy, the productivity of which is to be increased by 26%. - *Investments in renewable energy sources resulted in reduced emissions and increased GDP. Our objectives are to increase the use of renewable energy, improve energy efficiency and modernize our grid infrastructure. Renewable energy outputs started to increase when significant support was provided, as e.g. in the case of photovoltaic sources. Energy prices in Germany increased in recent years. However, they are decreasing now because the prices of energy from photovoltaic sources have decreased. We strongly promote and support the development of cogeneration units. This refers not only to huge heat and power plants but also, first and foremost to small units – micro-CHP – said Silke Karcher.*

Germany also introduced new energy standards for buildings: a grant scheme to support the modernization of existing buildings with an annual budget of Euro 1.5 billion. Germany also attaches great weight to the support of energy efficiency in small and medium sized enterprises: the administration helps identify the measures companies can take to increase their energy efficiency. Moreover, the German government has launched assistance schemes for low earning people who do not have money to pay their energy bills. - *We try to support local authorities, schools and individual users. We have a scheme in place which makes it possible for administrators of public buildings to reduce energy costs by up to 10%. We are becoming more and more independent, we are becoming a sustainable economy, new jobs are being created - she said.*

Poland and Germany have been cooperating effectively in the field of low emission economy, energy efficiency, climate and energy engineering for many years. Silke Karcher pointed to a number of potential new areas of cooperation with Poland, e.g. in the field of renewable energy sources. Karcher also drew attention to the fact that energy performance certification may be another field of cooperation between Poland and Germany. According to her, the energy performance certificate scheme which has been



launched in Poland looks promising, while in Germany no such programme has been implemented yet. Our western neighbour would like to make use of Poland's experience in this area. Furthermore, Germany recognizes the significant potential for cooperation with Poland in the field of development of cross-border infrastructure links.

**Artur Runge-Metzger**, Director of Directorate A - International and Climate Strategy at the Directorate-General for Climate Action of the European Commission, emphasized that emissions of greenhouse gases to the atmosphere have been decreasing since low emission economy programmes were launched in the EU (i.e. since 1990). In the same period, EU GDP increased by 40% and emissions decreased by almost 20%. He also stressed that the risks associated with the ETS will be distributed among the individual EU states. According to Artur Runge-Metzger, one of the arguments for the ETS was that the European Commission wanted to establish the same conditions for all companies throughout the EU. For example, the same limits would apply to chemical industry companies in all EU states.

According to a report by the International Energy Agency, if all low emission projects in Europe are implemented, emission reduction of 40% instead of 20% can be achieved. - *We believe that the energy prices will increase because more and more countries will be getting richer and will need more and more energy. However, the emissions of individual member states will have to be reduced as economic wealth across the EU levels out. Investments in innovative low emission technologies are necessary and here, in the EU, there will be no move away from that policy. The overriding goal of the European Commission is to become independent of fuel import from outside the EU* – the representative of the EC stressed.

#### Discussion panel on the economic dimension:

- **Lena Ek**, Minister of the Environment, Sweden
- **Dr Silke Karcher**, Head of Division, European Climate and Energy Policy, German Federal Ministry for the Environment Nature Conservation and Nuclear Safety
- **Artur Runge-Metzger**, Directorate A, International and Climate Strategy, Directorate General for Climate Action
- **Radosław Dudziński**, Vice-President of the Board, PGNiG

- **Herbert Wirth**, President of the Board, KGHM Polska Miedź
- **Joanna Schmid**, Vice-President of the Board for Strategy and Development, Tauron Polska Energia
- **Marian Strumiłło**, Vice-President of the Board, Dalkia Polska
- **Philippe Castanet**, President of the Board, EDF Polska
- **Grzegorz Szymczak**, President of the Board, EDP Renewables
- **Roman Łój**, President of the Board, Katowicki Holding Węglowy
- **Mikael Lemström**, President of the Board, Fortum Power & Heat Polska

After the presentations session, an interesting discussion on low emission economy began with the participation of leading managers of high emission sectors of the Polish economy and with representatives of other states.

**Joanna Schmid**, Tauron Polska Energia [Tauron Polish Energy] Deputy CEO responsible for Strategy and Development, emphasized that the global energy industry as a whole is not evolving towards low emission and that only the EU has set itself such a goal. - *If we compare the world and Europe we will find that about 1200 coal-fired power plants are to be built in 59 countries across the world. The world does not aim at being a low emission economy while Europe does, regardless of the costs. Moving towards a low emission economy is important but only when it is economically justified and in line with the principles of sustainable development* – Schmid emphasized.

According to her, the economic crisis should revise the views of some EU decision-makers so as to ensure that top priority is given to costs and the competitiveness of the economy. More than 90% of energy generated by Tauron Group is produced using coal based technologies. Tauron also develops low emission and zero emission technologies - investments into biomass, water and wind energy sources. Tauron also has stakes in clean coal technologies - the Deputy CEO informed the participants that the concern has a pilot-scale system which traps CO<sub>2</sub> from exhaust fumes and which is used in their power plants. However, decisions which technologies to pursue will be based on cost efficiency.

According to **Roman Łój**, CEO of Katowicki Holding Węglowy [Katowice Coal Holding], one conclusion may be drawn from the expert discussion, namely that the world of today is comprised of two beings: the



European Union and the rest of the world. Łój emphasized, however, that it is not the EU which is the leader of the global economy, but Asia which sets development trends. According to him, the EU is leaving itself out by introducing numerous regulations which reduce its competitiveness. According to the CEO of KHW, there are several issues that need to be addressed with determination: energy conservation, energy saving, energy audits, weatherproofing and energy efficiency. - *I have no doubt that in the future most energy will be produced from hard coal and lignite. We believe that the future of coal lies also in individual low and medium capacity sources based on retort boilers which have an efficiency exceeding 82% and emit much less particulate matter, soot, etc. The harnessing of coal mine methane is also a major opportunity offering twofold benefits: we do not pay for methane emissions to the atmosphere and we generate electricity and heat for the needs of our mines* - he said.

**Herbert Wirth**, CEO of KGHM Polska Miedź ["Polish Copper" Copper Mining and Metallurgy Concern], emphasized that environmental protection is very important, as important as safety. - *There are initiatives developed by the European Commission which I do not like. Nevertheless, we obey all the regulations in place. Therefore, KGHM processes all raw materials which generate emissions. As a country, we lag behind as concerns the processing of recyclable materials which generate less emissions. And this is where I believe low emission policy should play a major role* - he said. KGHM has launched two initiatives - CIGS photovoltaics and lignite underground gasification. Within the next few years, KGHM will spend PLN 100 million on new low emission technologies.

The next expert, **Radosław Dudziński**, Deputy CEO of PGNiG [Polish Oil and Gas Exploration and Production Company] (editorial note: Radosław Dudziński was the Deputy CEO until May 2013), said that in its strategy, PGNiG is focusing on the exploration of shale gas. PGNiG confirmed that this form of gas occurs in Polish shale formations. However, according to Dudziński, the mining of shale gas is not profitable with existing regulations, mining technologies and energy prices. Dudziński also emphasized that due to existing regulations and energy prices it is not profitable for energy companies in Poland to invest in coal-based energy generation. - *With no act on RES, the situation is such that it is also difficult for us to decide whether we should build renewable energy sources. What energy sources should we build in Poland then? I would like to remind you that we have introduced regulations according to which connecting users to the district heating system is a priority wherever a district heating system exists. This is another aspect which we have overlooked when promoting low emission economy. We forgot that we have a very specific*



*district heating sector - 70% of district heat is produced from coal. Such solutions make sense only when the obligation to connect users to the district heating system is accompanied by an obligation to develop low emission sources, e.g. gas, RES – he said.*

**Grzegorz Szymczak**, Country Manager of EDP Renewables, admitted that the support scheme known as green certificates for wind energy had made it possible to secure stable funding for such investments. It was a golden era for the development of RES in Poland. Poland was also lucky that the banks' approach to the funding of those projects was flexible as the financial crisis did not hit Europe until 2008. The financial sector accepted the regulatory risks in connection with the fact that the energy companies accepted the price risk, i.e. the risk that the price of certificates may fall and they are not secured against this. - *Thanks to that, 2500 MW of new wind power capacity and 4500 MW in total of new RES power capacity have been added to the energy system since 2005. Unfortunately, this RES development boom is coming to an end due to, among other things, instability caused by the unclear future of energy performance certification policy -* he said.

**Mikael Lemström**, CEO of Fortum Power & Heat Polska, agreed that Poland has to reduce emissions and stressed that energy biomass might be the best solution. According to him, Scandinavian countries are a good example. In Finland, biomass is of great importance in the energy industry due to the major role that the wood and paper industries play there. The same is true for Sweden. - *We have very efficient methods for using trunks and bark which is used as energy biomass in the pulp industry. We also reduce the costs of biomass transport. Poland has a long way to go before it can build such a system. However, it has great potential -* he said. According to Lemstrom, combined heat and power is also important for Poland. - *Thanks to its very specific district heating sector, Poland has great potential as concerns combined heat and power. This potential must be used -* he said.

**Marian Strumillo**, Deputy CEO of Dalkia Polska, believes that mechanical copying of solutions developed by someone in the EU simply stifles our economy more and more. - *1GJ of energy from coal, biomass and gas costs about PLN 13, PLN 23 and PLN 40, respectively. How to make a market from those? Regulatory mechanisms are indispensable. Unfortunately, many regulatory mistakes have been made. We are not analyzing the energy market and soon we will be shutting down the RES built in Poland because they are not cost-effective. Biomass-based sources and wind farms will be the first to go bankrupt. We will have a series of bankruptcies and the investors will be disappointed because they invested their money believing*





*that the regulatory mechanisms would be stable - he said. According to Strumiłło, there are no prospects for the Polish energy industry and we are losing many opportunities due to inaction.*

**Silke Karcher** from Germany stressed that a proper energy strategy must be supported by regulations if it is to be implemented. Germany has such regulations in place and has no problems with investments in the energy sector. The German energy strategy also includes investments in power plants based on fossil fuels, particularly gas. According to Karcher, the primary role of gas-fuelled power plants is to cushion the fluctuations in energy generation in the renewable energy market. – *The present energy strategy will be implemented until 2050. Its objective is not only to provide new investments in energy sources but, first and foremost, to ensure energy security of the country - she said.*

**Artur Runge-Metzger** of the European Commission emphasized that the Commission has no anti-coal policy. - *For us, energy security is one of the most important issues. Hence, coal should be present in the energy mix. But even in Poland, coal will not remain the most important energy source for ever. Nobody in Brussels is saying that coal must not be used in Poland. What we are saying is that we need to focus on how to use it better and make it more clean – he stated.*

### **Session III – Innovative dimension of low-emission economy – RES AND SMART SOLUTIONS AS SUPPORT TO LOW-EMISSION ECONOMY AND ENERGY MARKET (new technologies and new regulations)**

In the keynote speech at the opening of the third session of the Forum, **Piotr Pryciński PhD Eng**, Deputy Manager of the Programmes Management Unit of the National Research and Development Centre, said that the mission of the NRDC is to support Polish research units and enterprises in the development of their capacity to create and implement solutions based on the results of scientific research and development work. The NRDC budget has been growing steadily and expenditure on research and development has increased significantly since 2007. Today, the budget totals PLN 4.5 billion. NRDC programmes target various beneficiaries. The NRDC supports many types of programmes, including those of strategic importance for the Polish economy; they are both national and international programmes.





Discussion panel with the participation of the following experts:

- PhD Eng **Piotr Pryciński**, Deputy Head of Projects Management Department, National Centre for Research and Development
- **Robert Słotwiński**, Sales Manager, Solar Technology Department, Schüco International Polska
- **Andrzej Szymański**, President of the Board, Landis+Gyr
- **Grażyna Pietrzak**, Head of Municipality, the village of Bodzanów
- **Leszek Drogosz**, Director, Infrastructure Department, Warsaw Municipal Office
- **Bożena Wróblewska**, Gaspol

The discussion during the third and fourth sessions of the Forum was a continuation of the series of conferences and debates organized by *Procesy Inwestycyjne* within the framework of the project "Smart client in a smart grid", co-funded by the NFEPWM. The experts who took part in the discussion stressed that all innovative Smart Grid and RES technologies should be supported in a systematic way until their prices drop to a financially sustainable level. In their opinion, this is the cost that the EU public needs to pay in order for low emission economy to become a reality.

According to **Robert Słotwiński**, Marketing Manager of the Solar Technology Department of Schüco International Polska, without any support, photovoltaics will only be economically viable if one uses for one's own needs 50% of the energy produced, selling the other half. An analysis of the possible future pricing system for energy bought from prosumers leads to the conclusion that with prices in the range of PLN 90-1000/MWh (it is already clear that PLN 1100 is rather unrealistic) a prosumer installation will have a payback time of about 14 years. However, if one adds to this a support system which could be developed e.g. be the NFEPWM or VFEPWM to cover 20-30% of the costs, the payback time could be reduced to 9-10 years which should be attractive enough for investors. Słotwiński maintains that low emission technologies must be promoted and systematically supported until they become sufficiently widespread. – *For example, if one considers the purchase of photovoltaic installations which are the most popular investment among non-corporate clients, the very fact that people spend money they previously kept in banks creates a positive impulse for this sector of the economy. This is why I am confident that in the long run, support for*



*low emission technologies will be beneficial for the Polish economy - he said.*

According to **Andrzej Szymański**, CEO of Landis+Gyr, the low emission economy development strategy should focus firstly on modernizing technical infrastructure through development of automatic control systems for medium and low voltage networks, subsequently shifting focus to the development of distributed energy generation and finally to the development of commercial energy industry. - *We will not be able to transmit greater amounts of energy from new sources lacking the information on where energy is needed, who needs it and how much is needed - he argued.*

For **Grażyna Pietrzak**, Mayor of Bodzanów Municipality, what matters most are clear regulations that would motivate local governments to pursue investment projects. In her opinion, today local governments face very serious problems when an investor turns to them. - *One would think we should be happy to have an investor in the municipality. And, generally speaking, we are. Nevertheless, when a local government attempts to cooperate with an investor, it finds itself stuck in the maze of regulations that the state has imposed. Building and environmental regulations are the main obstacle. It is becoming increasingly difficult to find land which is not protected. Permitting procedures e.g. for wind farms take so long that investors often back away, discouraged - she said.*

**Leszek Drogosz**, Director of the Infrastructure Department of the Warsaw City Hall, has a similar attitude to regulations. In his opinion, local governments are still undervalued as partners by the central government when it comes to developing new legislation (although examples to the contrary also exist). The state also fails to notice the great potential of local governments with regard to the implementation of tasks that the state administration considers to be its exclusive area of responsibility. – *But whenever we talk with people from other countries, we learn that their views on cooperation with their central governments are similar to ours and that other countries also fail to take full advantage of the potential benefits of cooperation between local governments and central authorities. This is why, along with several other local governments in Poland, we decided not to wait for state regulations and developed our own low emission economy programme for Warsaw - he said.* Despite the systemic barriers mentioned by Director Drogosz, the authorities of Warsaw intend to spend PLN 500 million on energy-efficient housing in 2014 – 2020.

**Grzegorz Szymczak**, Country Manager of EDP Renewables also criticized the lack of unambiguous regulations with regard to RES in Poland. - *We are proposing changes to the Act on the protection of*



*farm and forest land, because we believe the current legislation hampers investments. Any development on first, second or third class soil must be preceded by a completely new, separate procedure. Every development decision requires a permit from the Ministry of Agriculture. We are a nation where completing any development project is a monstrous task - he stressed.*

On her part, **Bożena Wróblewska** of the Forum for the Development of Effective Energy (Forum Rozwoju Efektywnej Energii - FREE) pointed to the unutilized potential that Poland has in the field of micro-CHP development. – *At present, mass-manufactured, low-power devices are the bulk of what is available on the market. These devices have been tested and have manufacturers' certificates. The market offers devices with power ratings starting from 1 kW, but 20 kW cogeneration installations are also very popular. We have installed such a 20 kW unit at our LPG bottling plant in Pleszewo - she added.* Wróblewska stressed that micro-CHP brings the state at least two kinds of benefits: economic, as we produce electricity and heat on the spot, i.e. where they are used, with no transmission losses, and in highly efficient units; and environmental, as these units can run on natural gas or LPG, leading to reduced CO2 emission.

## **Session IV – Support mechanisms for low emission economy – past experience and the new financial perspective**

During the fourth session, **Małgorzata Skucha**, President of the National Fund for Environmental Protection and Water Management, opened the experts' debate by a keynote speech in which she informed the participants that starting from January 1st of this year until 2020 the NFEPWM will have in its strategy a separate area of activity focused on low emission economy and climate protection. Within this strategy, the NFEPWM supports not only air protection, energy efficiency and renewable energy sources, but also efficient resources management. - *The way we waste our resources is personally frustrating for me. This is why we are intent on preventing pollution, not just from the point of view of air protection and efficient waste management – continued the President.* She took the opportunity to break to the public the news of a new programme called KONSUMENT, aimed at co-funding the development of energy-generating micro-installations and micro-CHP. - *We hope to implement the support scheme through a system of banks so that everyone will be able to install their own source of heat and electricity. We are also*



keen to promote Polish micro-generation technologies which, in our view, will be very important for the development of low emission economy - she underlined.

**Discussion panel: Polish eco-innovation support instruments under the National Low Emission Economy Development Programme. EU low emission economy support instruments: SETPLAN, 7 Framework Programme, CiP, RSFF, Structural and Regional Funds**

Discussion panel with the participation of the following experts:

- **Małgorzata Skucha**, President of the Board, National Fund for Environmental Protection and Water Management
- **Prof. Andrzej Kraszewski**, Environmental Engineering Department, Warsaw University of Technology
- **Krzysztof Telega**, Vice-President of the Board, BOŚ Bank
- **Dr Andrzej Siemaszko**, Director, National Contact Point for EU Research Programmes
- **Prof. Krzysztof Żmijewski**, Secretary General, Public Board of the National Programme for Development of Low-Emission Economy

According to **Prof. Andrzej Kraszewski**, we are currently unable to ensure the economic viability of low emission technologies. In his opinion, we are providing support instruments in order to speed up the implementation of such technologies in the hope that once low emission technologies have matured, we will be able to withdraw support and low emission solutions will be strong enough to compete on the market. Kraszewski stated that while conventional energy solutions are capable to function on a market basis, RES-based or prosumer-based solutions will not cope on the market and therefore require support instruments in the initial phase of implementation. – *We should therefore accept it that for some time to come we will be subsidizing low emission technologies. Technological progress should play in favour of a*



*low emission European economy. We are counting in particular on innovations which are extremely important for the market viability of low emission technologies - he said.*

Prof. **Krzysztof Żmijewski**, Secretary General of the Public Board for Development of Low Emission Economy, underlined that sustainable development begins on municipality level. - *By starting to work on sustainable development in municipalities we will also achieve a very important educational objective. Programmes promoting public transport or energy-efficient vehicles will certainly help in achieving this objective. We should have more contests for innovative low emission solutions, so that money will go to those who are the best while those who are worse wait - he continued.* In the professor's opinion, the success of such programmes depends largely on administrative decisions which, as he underlined, should create as few problems as possible. - *Let me put it differently - let's look for the least polluting ways to move forward on an everyday basis, not least when creating regulations and issuing decisions. The fewer decisions a public officer has to make, the better for the economy- he said.* According to Żmijewski, one example of poor decision-making is the non-participation of local governments in the SOWA scheme which supports energy-efficient street lighting. Żmijewski argues that changing consumption models is crucial for the effective implementation of low emission policies. - *We must change our thinking about wastes, water management or the prosumer approach to energy. These models will not evolve if we keep on creating bureaucratic barriers. The EU ruling that broadband internet, e-administration, e-justice and e-learning are not part of low emission economy is an example of such "high emission thinking" by public officers. In our view this is precisely what low emission economy is about, as these solutions limit the senseless mobility which leads to emissions - he pointed out.* **Krzysztof Telega**, Deputy CEO of BOŚ Bank, underlined that the success of low emission economy depends on the demand for low emission technologies and that this demand may be boosted by appropriate support instruments. - *When our bank joined the solar panel installation co-funding scheme prepared by the NFEPWM, we had queues at our doors. The scheme met with great acclaim. If similar programmes are developed, with support mechanisms similar to those for non-corporate buyers of photovoltaic installations, I am confident that they will be very popular among our customers - he argued.* The bank sees benefits in low emission technologies and has therefore come forward with a special offer concerning the financing of environment-friendly, energy-efficient or passive houses. At present, the cost of construction of an energy-efficient or passive house is tens of percent higher than the cost of building a traditional house. Nevertheless, these new construction technologies have a future, especially in these latitudes. Telega believes that a combination of photovoltaics, wind,





heat pump, biomass and good insulation will turn customers into prosumers who will be able to sell surplus energy of their own making.

For Dr **Andrzej Siemaszko**, Director of the National Focal Point for EU Research Programmes, the fact that the public will develop energy-saving habits will in itself be an advantage for the Polish economy while the improvement of efficiency in the economy will be an extra bonus. - *I hope that within the next few years the prices of RES installations will go down and that in the future there will be no need to subsidize them. Innovations in prosumer energy generation are an opportunity for Poland's economic development. We have a market and we will have funds from the EU. What is missing are system solutions that would push the development of such technologies in our country. As a nation, we may specialize in the production of prosumer technologies* - he said. According to Siemaszko, by supporting the development of Polish low emission technologies, Poland will spend less on buying foreign technologies, improve the competitiveness of its economy and have a cleaner environment.

**Małgorzata Skucha** of the NFEPWM stressed that in its pursuit of emission reduction Poland should look not only at the capital costs but at the overall economic value of projects. She gave the positive example of the KAWKA programme which supports emission reduction, focusing on suspended particulate matter and BAPs. - *We not only look at how much money we will save directly by reducing these emissions, but also at savings in terms of reducing the social costs by reducing diseases. Another benefit of such programmes is the support of the companies which implement the projects and use the funds to create new jobs or boost demand for services and goods. Support for Polish investments and Polish technologies always pays off* - she underlined.

According to **Piotr Pryciński** of the NRDC money is not a problem in the implementation of low emission technologies. - *The challenge is to ensure that Polish technologies are used in Poland, as this is the only way to gain a competitive edge on the low emission market* - he said. The NRDC offers two streams of funding for the development of low emission technologies, i.e. domestic funds and EU funding. The domestic stream is strong and, according to Pryciński, there is considerable interest among potential applicants. Funding from the NRDC comes mostly in the form of grants, so what entrepreneurs receive from the NRDC is state aid and the level of support has to conform with state aid regulations. Support levels for commercial entities vary depending on the type of entity. The level of support for scientific establishments is 100%.





## Conclusions of the FORUM:

1. The government is developing an algorithm which will confirm that the activities undertaken in the field of low-emission economy are going to reduce greenhouse gas emissions and are going to sufficiently protect the country's industry against the so-called carbon leakage (moving the industry to countries where climate-related legislation does not have to be complied with).
2. The National Programme of Development of Low-Emission Economy and its implementation will help the government to prepare the analyses based on which Poland will develop its position for the subsequent negotiations with the European Commission on the reduction of emissions and the related costs.
3. For the low-emission economy development to be effective, it is necessary to use the potential of the country's economy, for instance of:
  - agriculture (the scale of agricultural biogas production in Poland is over 5 billion cubic metres per year; in energy biomass production Poland can be a leader in the EU)
  - RES (wind farms, in particular at the Baltic Sea)
  - Own capital of energy consumers (prosumer energy).
4. No predictable energy policy of the country can make the transition to a low-emission economy ineffective and not profitable (no regulations on energy certification - green and yellow certificates; no Act on RES; lack of up-to-date energy policy of the country).
5. Poland should develop and support its own low-emission technologies to be independent of foreign suppliers, and should develop innovative parts of the national economy, as done in other EU member states which use available and permissible regulations (e.g. environmental approvals of installations).
6. Poland should draw upon the experience in the implementation of low-emission mechanisms of the market leaders in Europe (Scandinavia, UK, Germany), and should develop cooperation with neighbouring countries in the development of low-emission technologies, in particular in the development of legal regulations conducive to market development.